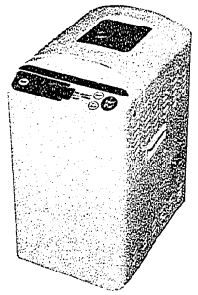
HITACHI

SERVICE MANUAL

NH No. 097E

HB-C103

A.C. 120V-60Hz



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1. SPECIFICATIONS

Description	Hitachi Automatic Home Bakery
Model	HB-C103
Rating	A.C. 120V
Heater	600W
Mixing Motor	72W
Capacitor	8μF (220V AC)
Dimensions	21.6 cm (W) x 31 cm (D) x 35.5 cm (H)
Weight	Approx. 5.9 kg
Timer	4 hours to 13 hours digital timer for baking reservation
Cold	P.V.C cord
Thermal Fuse	378°F (192°C)
Accessories	Measuring Cup, Measuring Spoon
Lot No.	Indicated on the bottom with permanent ink.

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE TO IMPROVEMENT.

AUTOMATIC HOME BAKERY

AUGUST 1994 HITACHI HOMETEC, LTD. KASUKABE WORKS

2. OUTLINE OF STRUCTURE

A detachable bread pan is mounted on the center of this bakery. Projected from the bottom center of the bread pan is a rotary shaft to which a detachable mixing blade is attached. A bearing assembly is located under the bread pan and it is mounted on the chassis. The mixing motor is mounted on the chassis on the front side, its driving power is transmitted to the mixing blade inside the bread pan via a pulley, and a belt. The steel case is flanked around the bread pan and it forms a heating chamber.

A heater extends from the bottom. A bread pan temperature sensor is provided on the bottom of heating chamber; it remains in contact with the bottom of bread pan, and senses the temperature of a dough in the bread pan. The heater and mixing motor are controlled by the above sensor output and a microcomputer in the control panel on the front top of bakery.

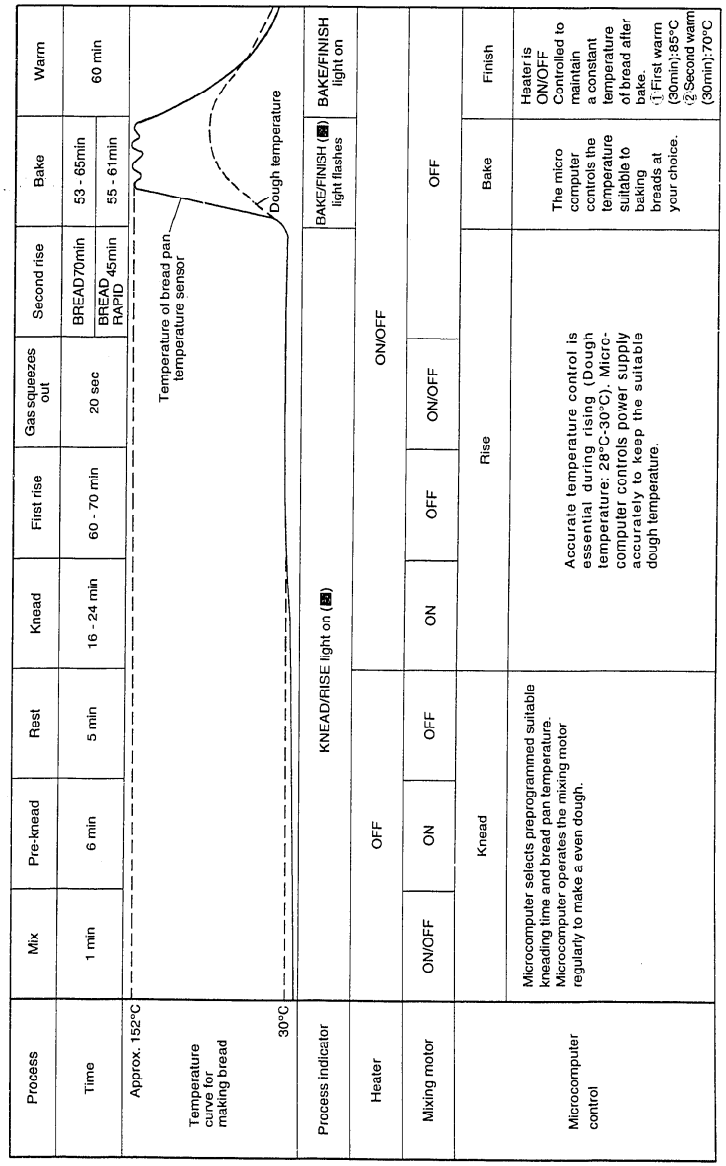
The bakery itself is enclosed with plastic and steel sheets, and a detachable lid is placed on its top.

Major Features

1 A large baking capacity of one and one-half pound.
2 Over heater assures even and fine baking.
3 You can set the color setting to "light", "medium".
4 The bread maker let you have delicious fresh bread every morning by using the built-in 13 hr. timer operation.
5 Quick baking function enables you to bake bread in 2 hours and 30 minutes.
6 Backup function maintains the baking condition for about 30 seconds in case of power failure.
7 With window to view the making operation.

3. BASIC OPERATION

3-1 Bread / MIX Bread Course



Process	Mix	Pre-knead	Rest	Knead	First rise	Gas squeezes out	Second rise	Bake	Warm
Time	1 min	6 min	5 min	16 - 24 min	60 - 70 min	20 sec	BREAD 70min BREAD RAPID 45min	53 - 65min 55 - 61min	60 min
Temperature curve for making bread									
Process indicator	KNEAD/RISE light on (■)							BAKE/FINISH (■) light flashes	BAKE/FINISH light on
Heater	OFF						ON/OFF		
Mixing motor	ON/OFF	ON	OFF	ON	OFF	ON/OFF		OFF	
Microcomputer control	Microcomputer selects preprogrammed suitable kneading time and bread pan temperature. Microcomputer operates the mixing motor regularly to make a even dough.	Knead			Rise		Accurate temperature control is essential during rising (Dough temperature: 28°C-30°C). Micro-computer controls power supply accurately to keep the suitable dough temperature.	The micro computer controls the temperature suitable to baking breads at your choice.	Finish Heater is ON/OFF Controlled to maintain a constant temperature of bread after bake. ①First warm (30min):85°C ②Second warm (30min):70°C

3-2 Control of BREAD RAPID Course

Though it is the same as the Bread course, the fermentation process is cut short as much as the increased volume of yeast, thus reducing the total baking time.

3-3 Control of DOUGH Course

It operates till the first rise in Bread course and beeping sounds to tell you the finish.

3-4 Control of whole wheat Bread Course

Process	Mix	Pre-knead	Rest	knead	First rise	Gas squeezes out 1	Second rise	Gas squeezes out 2	Third rise	Bake	Warm
Timer	30sec	10min	100min	14min	56min	20sec	25min	20sec	48min	45min	60min
Heater	OFF	ON/OFF									
Mixing motor	ON/OFF	ON	OFF	ON	OFF	ON/OFF	OFF	ON/OFF	OFF		

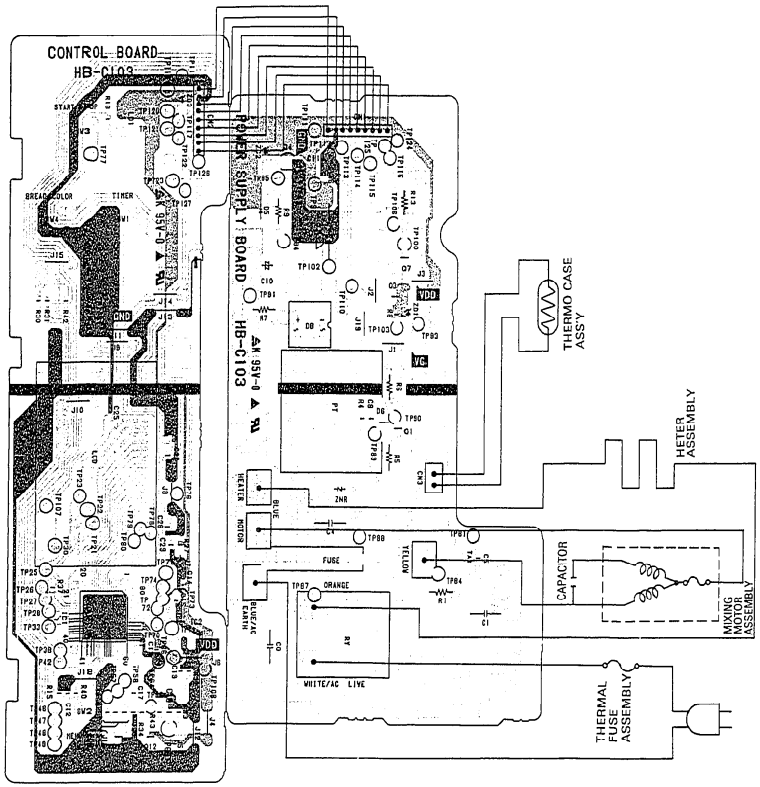
3-5 Control of CAKE1(Pound Cake)Course

Process	Pre-heating	Bake
Timer	7min	48min
Heater	ON/OFF	ON/OFF
Mixing motor	OFF	OFF

3-6 Control of CAKE2(Pound Cake)Course

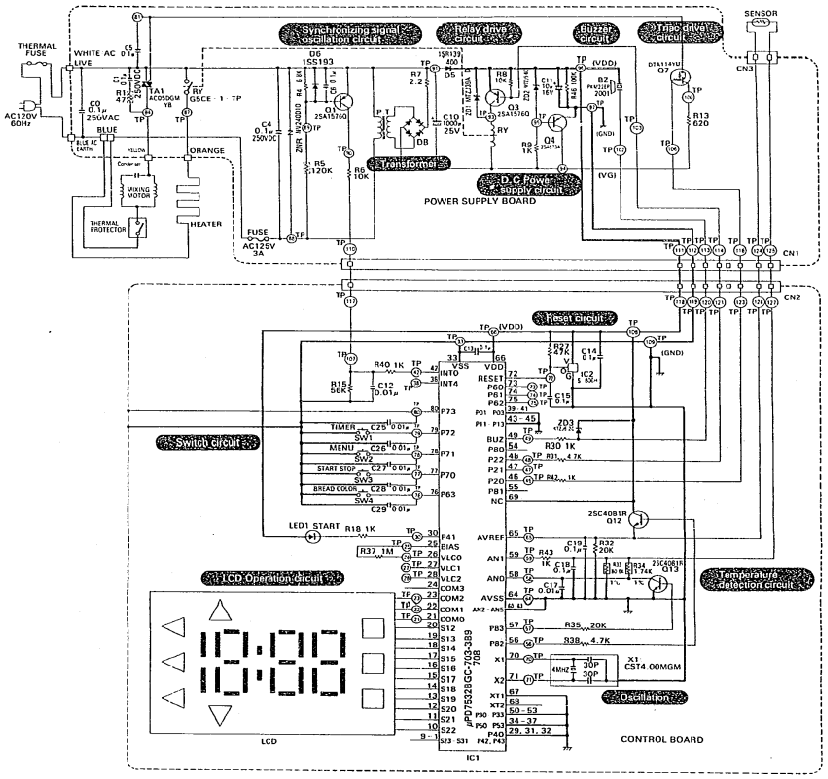
Process	Pre-heating	Bake
Timer	7min	58min
Heater	ON/OFF	ON/OFF
Mixing motor	OFF	OFF

4. CONTROL CIRCUIT DIAGRAM



5. WIRE CONNECTION DIAGRAM

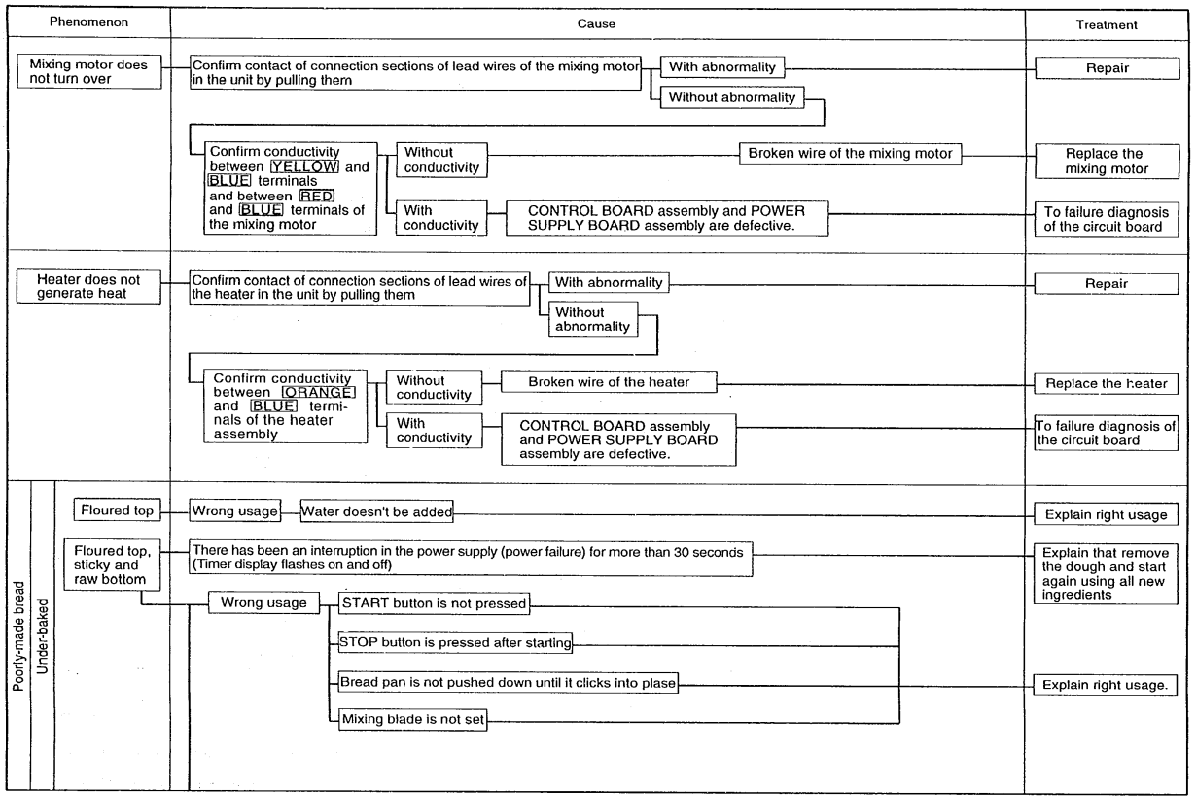
This is the wire connection diagram which you see from the copper coating side on the board.

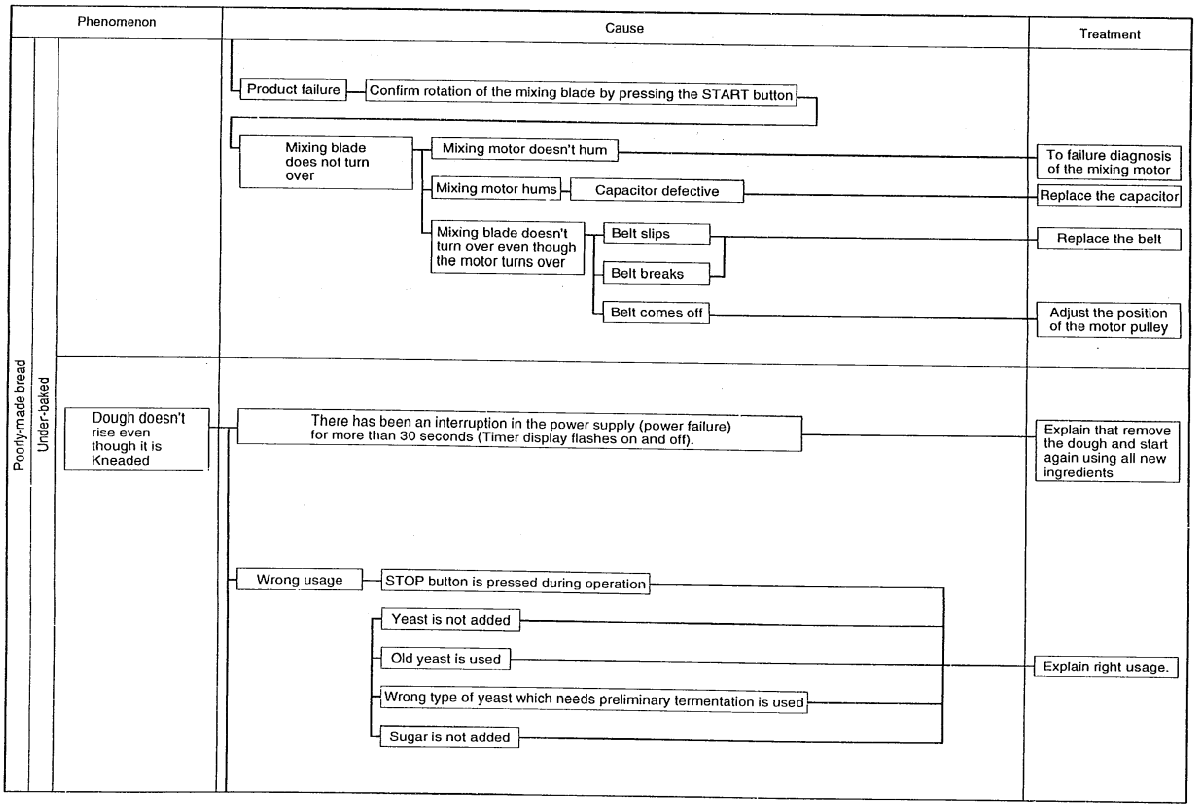


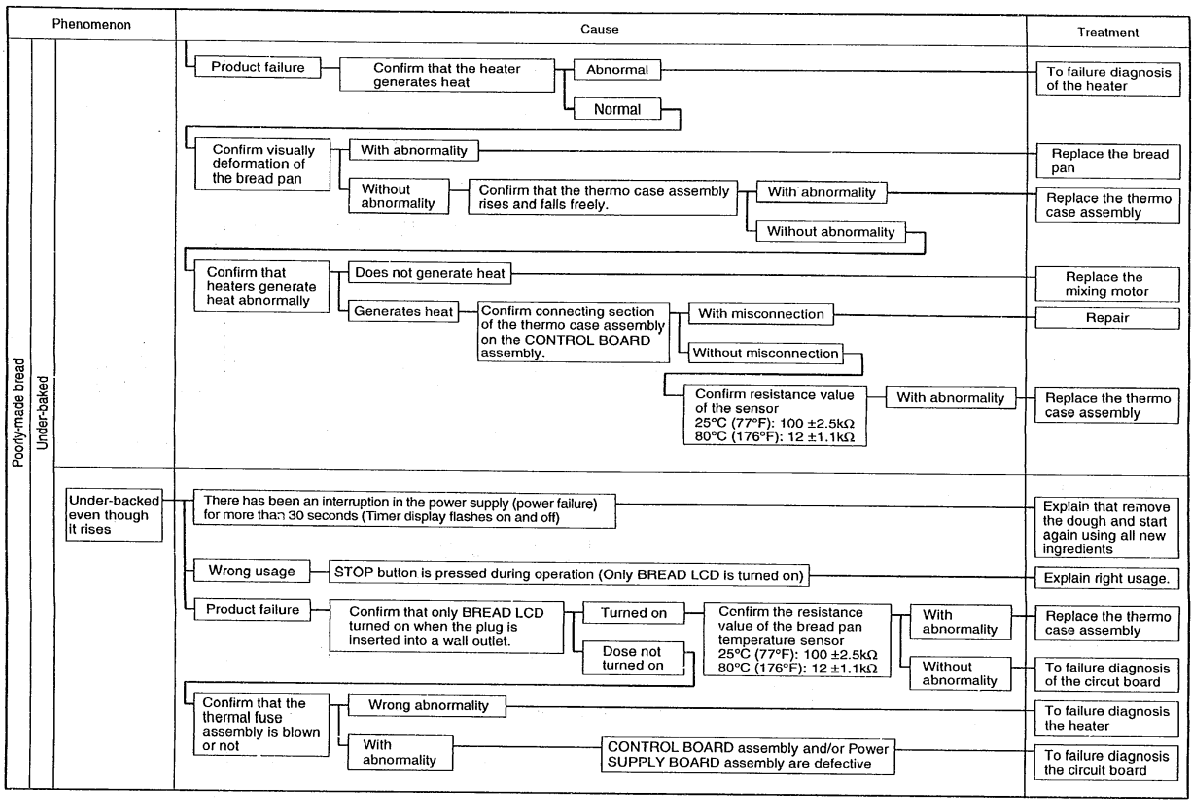
6. TROUBLESHOOTING LIST

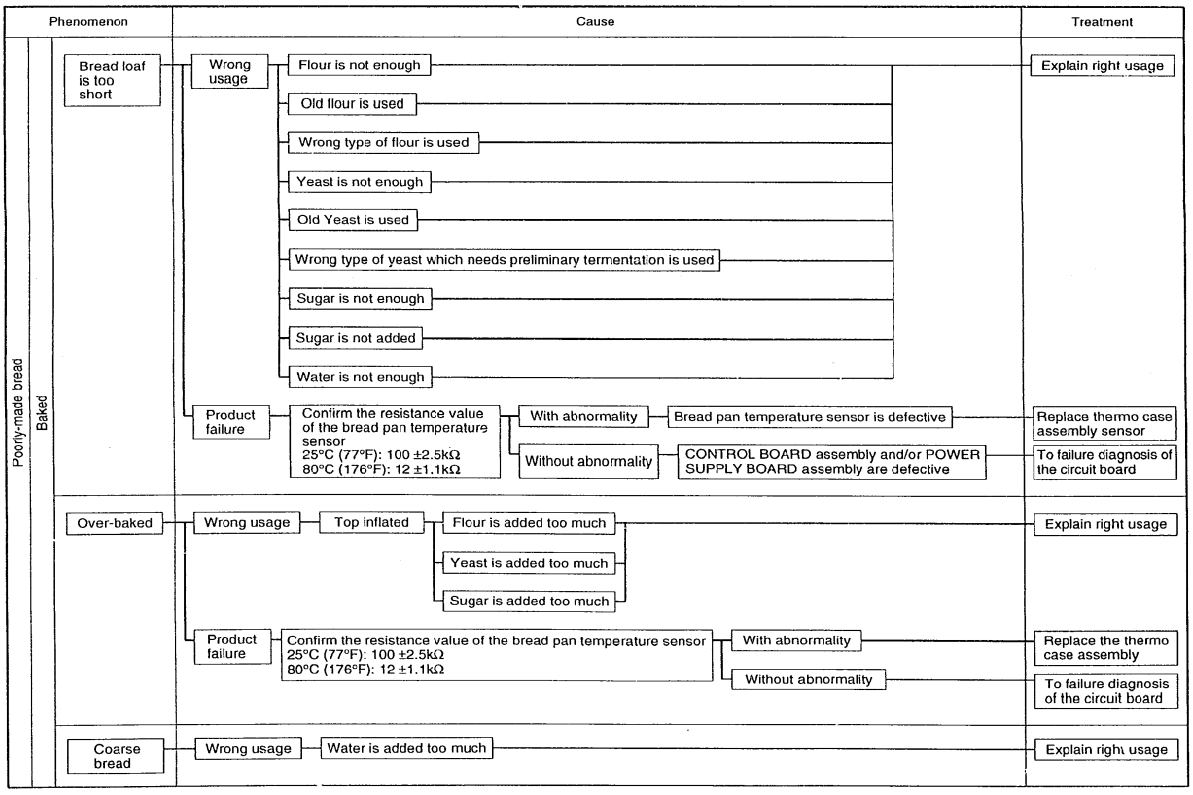
6-1 Failure Diagnosis other than Circuit Board Assembly

Phenomenon	Cause					Treatment
A fuse of the safety device of the house is blown.	Confirm conductivity between both edges of plug by tester	With conductivity ... The resistance value is almost zero (There is short circuit.)	Confirm visually short circuit and contact of installation and connection sections of cord and inside lead wire	With abnormality		Repair
				Without abnormality	Short circuit in the cord, short circuit in the plug	Replacement
		With conductivity ... The resistance value is approx. 1 kΩ.	Other components are failed	When the cord assembly is not abnormal.	Short circuit of the section not visually confirmed	Repair
Does not operate	Power failure					
	Press the reset switch button	Operates				
		Does not operate	Confirm contact of connection sections of cord, inside lead wire, heaters, motors, etc. in the unit by pulling them.	With abnormality (looseness of screw and Faston terminal, etc.)		Repair
				Without abnormality		
	Confirm conductivity between plug edge and cord end by tester	Without conductivity	Broken line in the cord. Defective contact in the plug			Replace the cord assembly
		Without conductivity				
	Confirm visually contact between plug edge and plug socket. Much play between plug edge and plug socket, etc.	With abnormality				Repair
		Confirm the plug socket too	Consult with the service shop when there is abnormality			
		Without abnormality				
	Confirm conductivity of the thermal fuse assembly	Without conductivity	Thermal fuse is defective			Replace the thermal fuse
		With conductivity	CONTROL BOARD assembly and POWER SUPPLY BOARD assembly are defective.			To failure diagnosis of the circuit board


Phenomenon
Cause
Treatment
Mixing motor does not turn over
Confirm contact of connection sections of lead wires of the mixing motor in the unit by pulling them
With abnormality
Repair
Without abnormality
Confirm conductivity between YELLOW and BLUE terminals and between RED and BLUE terminals of the mixing motor
Without conductivity
Broken wire of the mixing motor
Replace the mixing motor
With conductivity
CONTROL BOARD assembly and POWER SUPPLY BOARD assembly are defective.
To failure diagnosis of the circuit board
Heater does not generate heat
Confirm contact of connection sections of lead wires of the heater in the unit by pulling them
With abnormality
Repair
Without abnormality
Confirm conductivity between ORANGE and BLUE terminals of the heater assembly
Without conductivity
Broken wire of the heater
Replace the heater
With conductivity
CONTROL BOARD assembly and POWER SUPPLY BOARD assembly are defective.
To failure diagnosis of the circuit board
Poorly-made bread
Under-baked
Floured top
Wrong usage
Water doesn't be added
Explain right usage
Floured top, sticky and raw bottom
There has been an interruption in the power supply (power failure) for more than 30 seconds (Timer display flashes on and off)
Explain that remove the dough and start again using all new ingredients
Wrong usage
START button is not pressed
STOP button is pressed after starting
Bread pan is not pushed down until it clicks into plase
Explain right usage.
Mixing blade is not set


Phenomenon
Cause
Treatment
Poorly-made bread
Under-baked
Product failure
Confirm rotation of the mixing blade by pressing the START button
Mixing blade does not turn over
Mixing motor doesn't hum
To failure diagnosis of the mixing motor
Mixing motor hums
Capacitor defective
Replace the capacitor
Mixing blade doesn't turn over even though the motor turns over
Belt slips
Replace the belt
Belt breaks
Belt comes off
Adjust the position of the motor pulley
Dough doesn't rise even though it is Kneaded
There has been an interruption in the power supply (power failure) for more than 30 seconds (Timer display flashes on and off).
Explain that remove the dough and start again using all new ingredients
Wrong usage
STOP button is pressed during operation
Yeast is not added
Old yeast is used
Explain right usage.
Wrong type of yeast which needs preliminary termentation is used
Sugar is not added

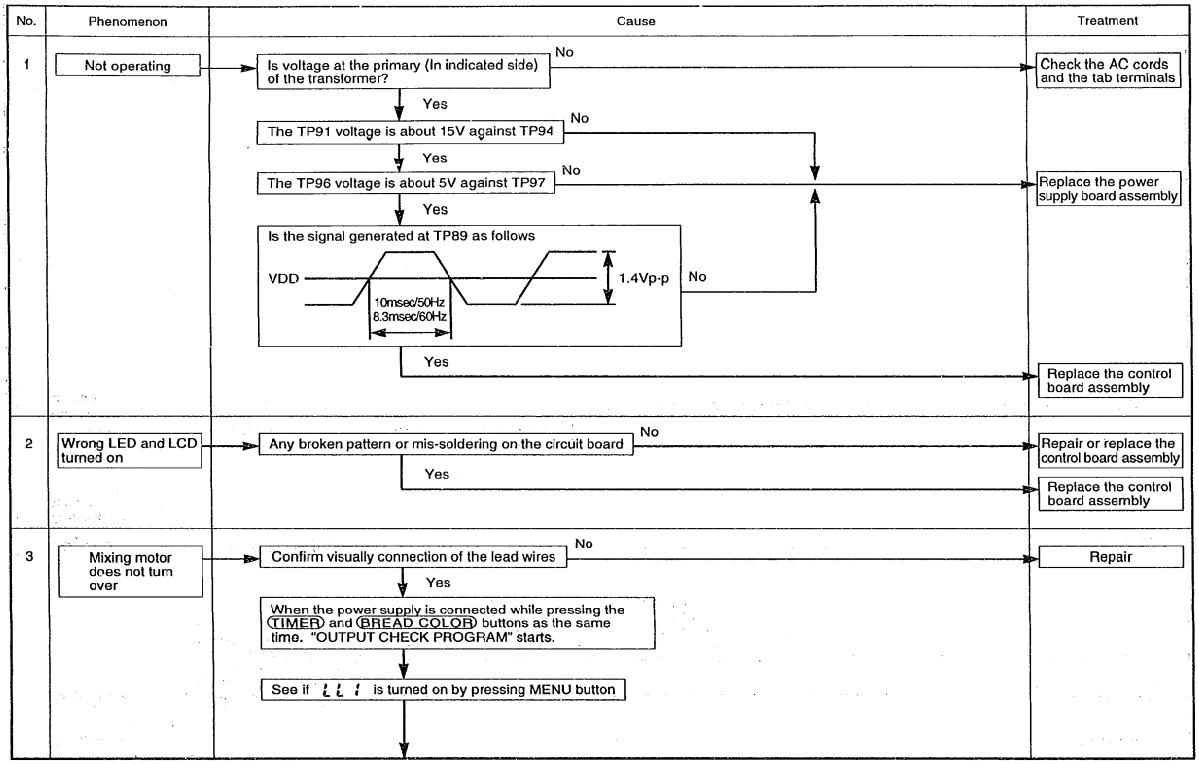

Phenomenon
Cause
Treatment
Poorly-made bread
Under-baked
Product failure
Confirm that the heater generates heat
Abnormal
Normal
To failure diagnosis of the heater
Confirm visually deformation of the bread pan
With abnormality
Replace the bread pan
Without abnormality
Confirm that the thermo case assembly rises and falls freely.
With abnormality
Replace the thermo case assembly
Without abnormality
Confirm that heaters generate heat abnormally
Does not generate heat
Replace the mixing motor
Generates heat
Confirm connecting section of the thermo case assembly on the CONTROL BOARD assembly.
With misconnection
Repair
Without misconnection
Confirm resistance value of the sensor
25°C (77°F): 100 ±2.5kΩ
80°C (176°F): 12 ±1.1kΩ
With abnormality
Replace the thermo case assembly
Under-backed even though it rises
There has been an interruption in the power supply (power failure) for more than 30 seconds (Timer display flashes on and off)
Explain that remove the dough and start again using all new ingredients
Wrong usage
STOP button is pressed during operation (Only BREAD LCD is turned on)
Explain right usage.
Product failure
Confirm that only BREAD LCD turned on when the plug is inserted into a wall outlet.
Turned on
Confirm the resistance value of the bread pan temperature sensor
25°C (77°F): 100 ±2.5kΩ
80°C (176°F): 12 ±1.1kΩ
With abnormality
Replace the thermo case assembly
Without abnormality
To failure diagnosis of the circut board
Dose not turned on
Confirm that the thermal fuse assembly is blown or not
Wrong abnormality
To failure diagnosis the heater
With abnormality
CONTROL BOARD assembly and/or Power SUPPLY BOARD assembly are defective
To failure diagnosis the circuit board

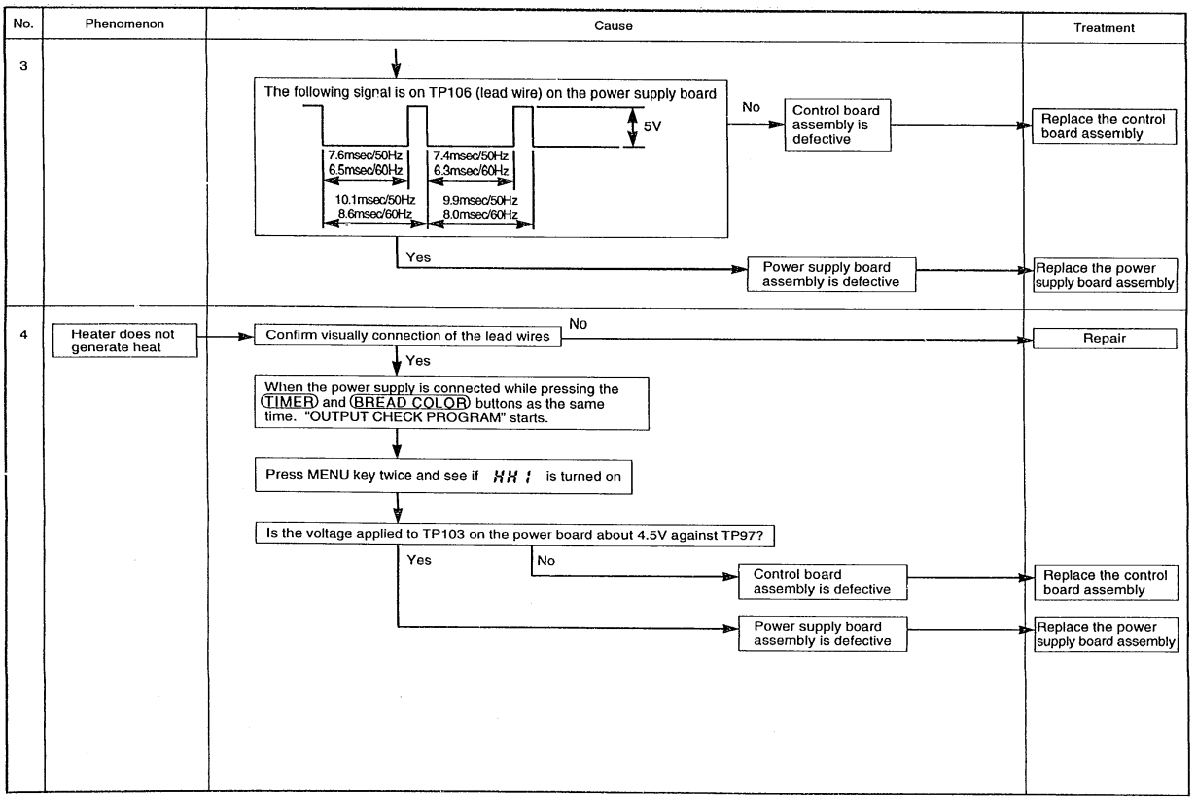

Phenomenon
Cause
Treatment
Poorly-made bread
Baked
Bread loaf is too short
Wrong usage
Flour is not enough
Explain right usage
Old flour is used
Wrong type of flour is used
Yeast is not enough
Old Yeast is used
Wrong type of yeast which needs preliminary termentation is used
Sugar is not enough
Sugar is not added
Water is not enough
Product failure
Confirm the resistance value of the bread pan temperature sensor
25°C (77°F): 100 ±2.5kΩ
80°C (176°F): 12 ±1.1kΩ
With abnormality
Bread pan temperature sensor is defective
Replace thermo case assembly sensor
Without abnormality
CONTROL BOARD assembly and/or POWER SUPPLY BOARD assembly are defective
To failure diagnosis of the circuit board
Over-baked
Wrong usage
Top inflated
Flour is added too much
Explain right usage
Yeast is added too much
Sugar is added too much
Product failure
Confirm the resistance value of the bread pan temperature sensor
25°C (77°F): 100 ±2.5kΩ
80°C (176°F): 12 ±1.1kΩ
With abnormality
Replace the thermo case assembly
Without abnormality
To failure diagnosis of the circuit board
Coarse bread
Wrong usage
Water is added too much
Explain right usage

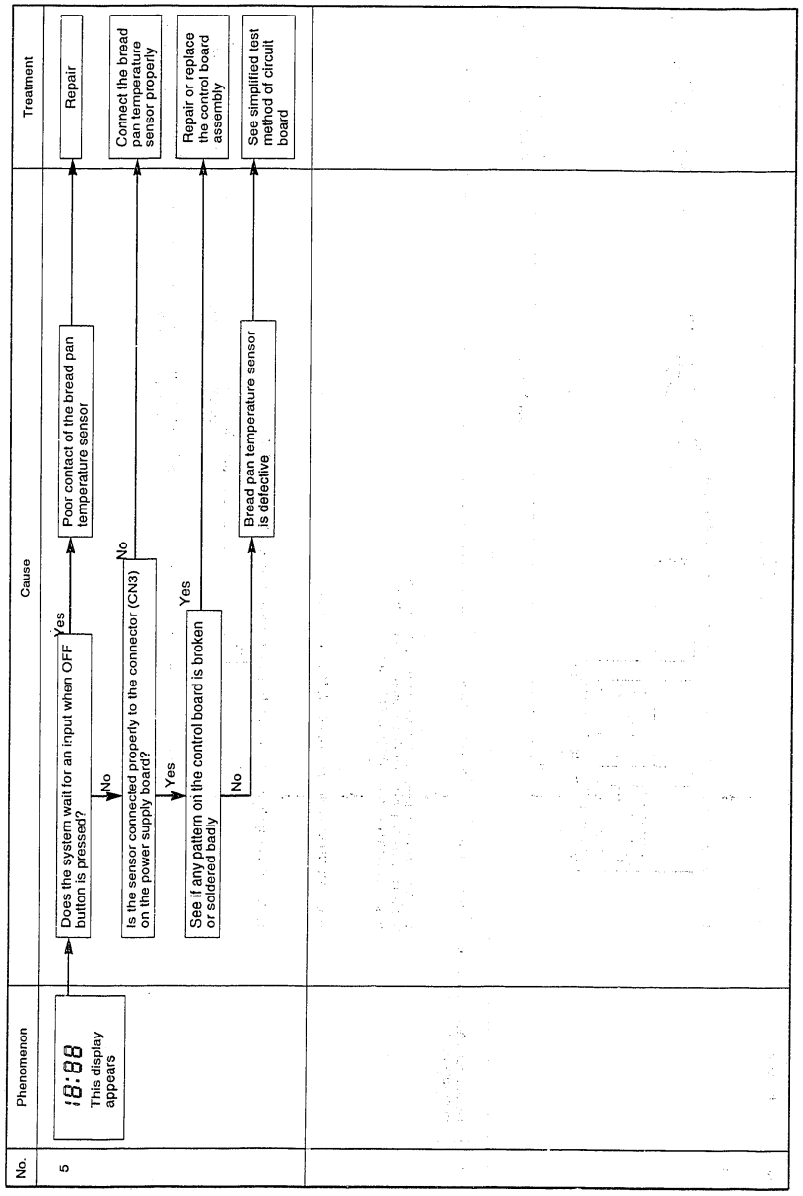
Phenomenon		Cause		Treatment
Poorly-made bread: Baked: Ill-shaped bread		Wrong usage	Flour is not added enough	Explain right usage
		The others		Explain as follows. The shape of bread differ depending on the condition of gas squeeze out.
Slices unevenly and is sticky		Wrong usage	Bread is sliced just after baking	After cooling the bread, cut it with a bread knife
Smoke emitted from openings		Wrong usage	Ingredients or crumbs are spilled on the heater or oven area	Explain as follows: Be sure that the oven area always kept clean.
Heater is heated or thermal fuse is blown after making bread is finished		Circuit board failure		To failure diagnosis of the circuit board
Plug is overheated		Poor contact of connector plug		Replace the cord assembly

Phenomenon	Cause			Treatment
Electric shock	Confirm visually damaged insulation cover of cord and lead wire in contact with metallic part of the unit	With abnormality: There is contacting part		Replacement
		Without abnormality	Remove all screws, soldered joints and Faston terminals connecting cord and lead wires. Measure between terminals and metallic parts of the unit with 500V megger. Defective insulation for lower than 1 MΩ.	Repair, if possible
18:88 This display appears	Circuit board failure			To failure diagnosis of the circuit board
18:88 This display appears	Bread pan temperature sensor failure	Confirm visually connection of the bread pan temperature sensor	With abnormality	Repair
			Without abnormality	To failure diagnosis of the circuit board

6-2 Diagnosis of Failures of Circuit Board (See if any circuit board, pattern or component is broken in advance)






No.
Phenomenon
Cause
Treatment
5
18:88
This display appears
Does the system wait for an input when OFF button is pressed?
Yes
No
Poor contact of the bread pan temperature sensor
Repair
Is the sensor connected properly to the connector (CN3) on the power supply board?
No
Yes
Connect the bread pan temperature sensor properly
See if any pattern on the control board is broken or soldered body
Yes
No
Repair or replace the control board assembly
Bread pan temperature sensor is defective
See simplified test method of circuit board

7. SIMPLIFIED TEST

7-1 Simplified Test Method of Motor and Heater

The Micro-computer is located on the control board assembly. Comtirm the model number of the micro-computer.

IN CASE OF THE MODEL NUMBER : D75328GC-703
Insert the power plug while pressing both the (TIMER) and (BREAD COLOR) buttons after the power plug has been disconnected for two to three minutes. (Not requiring wait for two to three minutes, when the power plug has been extracted while running the test program.)

IN CASE OF THE MODEL NUMBER : D75328GC-708
Insert the power plug while pressing both the (TIMER) and (BREAD COLOR) buttons. (Not requiring wait for two to three minutes, except the power plug has been extracted while starting the bread pan program.)

As the "OUTPUT CHECK PROGRAM" is initiated by the above operation, press the (MENU) button successively, and see if the motor and heaters are properly powered or not. The "OUTPUT CHECK PROGRAM" runs in the items from 1 to 4 on the right side of this page.

1.Mixing motor intermittently powered.
The main motor is powered in a cycle of switching on for 0.1 sec, and switching off for 0.9 sec.

The LCD display L L 1 flickers.
↓
Press the (MENU) button.

2.Mixing motor powered continucusly.
The mixing motor is continuously powered and runs CW.

The LCD display L L 1 remains on.
↓
Press the (MENU) button.

3.Heater powered.
The mixing motor is switched off and the heaters are powered.

The LCD display H H 1 is turned on.
↓
Press the (MENU) button.

4.Full output.
The mixing motor and the heaters are all powered.

The LCD display A L L is turned on.
↓
Press the (START/STOP) button for two seconds.
↓
This program is canceled.

7-2 Simplified Test Method of Circuit Board.

Insert the power plug while pressing both the (TIMER) and (MENU) buttons. (for the power plug insertion see item 7-1 above.)

The "SELF-DIAGNOSIS PROGRAM" is then initiated. Press the (MENU) button successively, and see if the board is properly operating.

The "SELF-DIAGNOSIS PROGRAM" runs in the following sequence.

Process	Operation	Transfer condition
1	LCD " BREAD RAPID / WHOLE WHEAT BREAD / DOUGH / BREAD/MIX BREAD / CAKE " are turned on.	Proceed (MENU) button to proceed to next stop.
2	LCD " KNEAD / RISE / BAKE / FINISH / LIGHT " are turned on.	Proceed (MENU) button to proceed to next stop.
3	LCD " WAIT " is turned on.	Proceed (MENU) button to proceed to next stop.
4	Timer LCD " 18:88 " is turned on.	Proceed (MENU) button to proceed to next stop.
5	LED "START" is turned on.	Proceed (MENU) button to proceed to next stop.
6	Display of frequency appears 50Hz ··· " 50 " is turned on. 60Hz ··· " 60 " is turned on.	Proceed (MENU) button to proceed to next stop.
7	Timer LCD " C 13 " is turned on.	Proceed (MENU) button to proceed to next stop.
8	Buzzer buzzes.	Proceed (MENU) button to proceed to next stop.
9	Mixing motor operates ...	Proceed (MENU) button to proceed to next stop.
10	Heater heats operates ...	Proceed (MENU) button to proceed to next stop.
11	The following timer LCD displays are turned depending on the detected temperature. T < - 5 °C : 1 - 5 °C ≦ T < 10 °C : 2 10 °C ≦ T < 18 °C : 3 18 °C ≦ T < 28 °C : 4 28 °C ≦ T < 30 °C : 5 30 °C ≦ T < 36 °C : 6 36 °C ≦ T < 38 °C : 7 38 °C ≦ T < 46.5°C : 8 46.5°C ≦ T < 47 °C : 9 47 °C ≦ T < 60 °C : 10 60 °C ≦ T < 140 °C : 11 140 °C ≦ T < 152 °C : 12 152 °C ≦ T : 13 (0 is displayed if the sensor is kept open, or 14 if it is shorted.)	• Proceed to process 12 when the (MENU) button is pressed • This self-diagnosis program is canceled when the (START/STOP) button is pressed for two seconds.

Note : Press the (START/STOP) button for two seconds at the finish of above the test.

Process	Operation	Transfer condition
12	Turn on the LCD display in order BREAD BREAD RAPID WHOLE WHEAT BREAD DOUGH CAKE LIGHT KNEAD / RISE BAKE / FINISH WAIT per 0.3 seconds.	Total 2.7 seconds.
13	Turn on the LCD display in order 0 1 ··· 9 (minute) 10 20 ··· 50 (10minutes) 1:00 2:00 ··· 13:00 (hour) pre 0.3 seconds	Total 8.4 seconds.
14	LED "START" is turned on.	0.3 seconds
15	All the LCD display and LED are turned on. 18:88 WAIT START / STOP	• Operation returns to process, 1 when the (MENU) button is pressed. • This self-diagnosis program is canceled when the (START/STOP) button is pressed for two seconds.

Note : Press the (START/STOP) button for two seconds at the finish of above the test.

7-3 Heat Run Test Method

Insert the power plug while pressing both the (START/STOP) and (BREAD COLOR) buttons. (for the power plug insertion see item 7-1 above.)
The "HEAT RUN PROGRAM" is initiated.
Press the (START/STOP) button.
The "HEAT RUN PROGRAM" runs in the following sequence.

Operation	Timer LCD	BREAD ▲	KNEAD/RISE ■	BAKE/FINISH ■
Insert the power plug while pressing both the (START/STOP) and (BREAD COLOR) buttons.	C 13			
Press (START/STOP) button		ON		
Mixing Motor and Heater: Start.				
No TH ≧38°C Yes	0 Increment the number per one sec.			
	1			
No TH ≧ 47°C Yes	35 * Permissible Range: 17 to 59. sec.		ON	ON
Mixing Motor and Heater: Stop.	35	ON	ON	ON
Press (START/STOP) button for two seconds.		ON		
END				

NOTES:
1.* The incremented numbers could be changed under ambient temperature.
2.If * the incremented number was not within 17 to 59, check again this heat run test after cooling down the unit.
These incorrect number is mainly caused by incorrect putting the bread pan.
If the re-checked number was not within 17 to 59, check to ensure that bread pan has been contacted with sensor cup.
3.* The correct incremented numbers are based on the following conditions
Ambient Temperature : 15°C to 25°C

8. PROCEDURES FOR DISASSEMBLY AND REPAIR

8-1 Pay attention to the following at Service and inspection

(1)Protect against electric shock
Before staring the servicing or checks, ALWAYS disconnect the plug to protect against electric shock. Do NOT touch any live component when servicing or checking the powered bakery.

(2)Restore original condition of components and wire layout
For safety protection the insulated tubes are used and the wirings are separated away from the heated and detachable component. To mount these insulated components and bundled wirings, be sure to replace them on their original position.

8-2 Guide to Repair

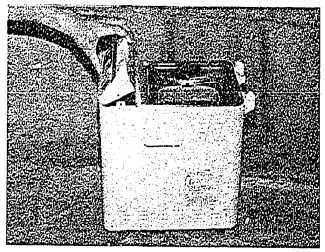
(1)In case of defective sensor
Measure the resistance of any defective sensor to determine if it is defective.

(2)The positive locks are attached to all the fasten terminals. The terminals enclosed with housing can be pulled out by housings can be pulled out by unlocking the locks with fingertips. Make sure the terminals are properly locked after inserting them into the locks.

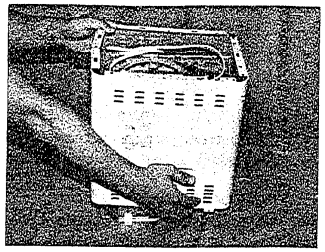
8-3 Procedures for Disassembly
The bracketed figures correspond to the numbers shown in the Service Parts List.

(1)Replacement of lid assembly
(a)Lift up the lid assembly at about 45°, and pull it askew toward you.
(b)Place the lid assembly with its inside facing upward, remove four screws ㊺ from the inner lid ⑪. Then insert a ⊖ driver into the gap between the inner lid and the outer lid ⑦⑧, and remove the inner lid ⑪.

(2)Replacement of panel assembly.
(a)Remove the screw ㊼, ㊽.
(b)The outer case assembly pull out the panel assembly with the control board assembly.
(c)Remove the plug socket terminals from the power supply board assembly.



(3)Replacement of outer case (mixing motor, capacitor, thermal fuse assembly, power supply board assembly)
(a)Remove the screws ㊾, and the hold spring can be removed. Remove the screws ㊻ ㊼. The hinges (L)⑰ (R)⑯ and the reflector can be removed from the outer case assembly. Remove the screws㊹, and the inner case upper ⑩ :can be removed.
(b)Place the body upside down, and remove screws with the rubber foot ⑫. Remove the bottom five screws ㊸, and the bottom plate ⑬ can be removed Then remove the outer case assembly.



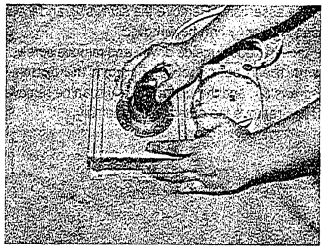
(c)Remove the screw suitably and the mixing motor ㊿, the condenser ㊾ the thermal fuse assembly ㉓ and the power supply board case ㉑ with the power supply board assembly ㉒ can be removed. Disconnect the lead wires from these components necessary.,

(4)Replacement of heater assembly
(a)Remove the four screw ㉔ securing the inner case body ㉞ to the bearing assembly.
(b)Remove the screws ㊿ securing the insulator (2) assembly ㉗ and heater holder ㉕, and remove the heater assembly.
(c)Remove the claw of inner case body ㉞ inserted into the inner case bottom, and pull out the heater assembly ㉖.

(5)Replacement of bearing assembly

(a)Remove the belt ㊲ and the M6 hexagon nut securing the pulley ㊵. Then the pulley can be removed with the M6 washer and the hold plate assembly ㊴.

(b)Remove the ø8U type washer and the thrust washer ㊶.Then pull up the shaft assembly ㊷.



(c)Remove three screws ㊽ securing the bearing assembly ㊸ on the chassis ㊹, and pull out the bearing assembly.

8-4 Procedures for assembly

The disassembled bakery can be re-assembled in the reverse way, but the following cautions should be taken in its assembling.

(1)Installation of thermal fuse assembly

Mount the thermal fuse assembly ㉙ in the way that its fuse holder come in contact with the walls of the inner case body ㉞ by screws ㉜.

(2)Installation of heater assembly

Make sure the lock screws of the heater assembly ㉘ are not clamped so tight in its assembly as to crack or damage the insulators.

(3)Installation of thermo case assembly

The thermo case assembly ㉚ must be able to rise and fall freely though the opening of the thermo cover ㉛.

(4)Installation of bread pan assembly

See if the bread pan assembly ⑤ loaded on the bakery dose not allow a play between the hold spring ㉔ on its both walls, and it is secured in place.

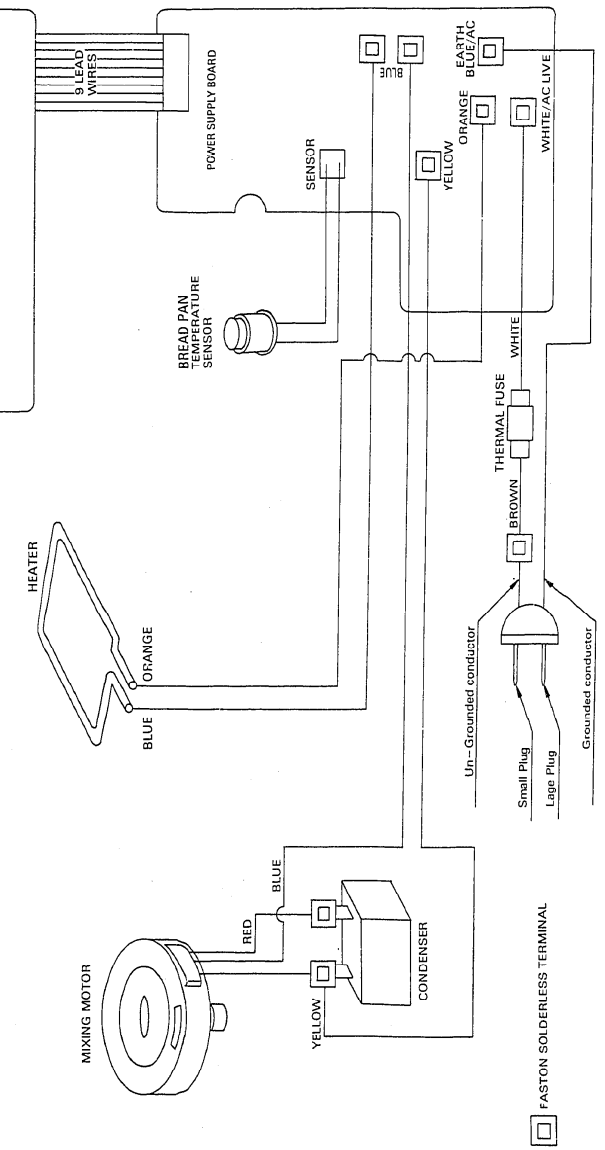
9. SERVICE PARTS LIST

HB-C103(120V EDISON PLUG)

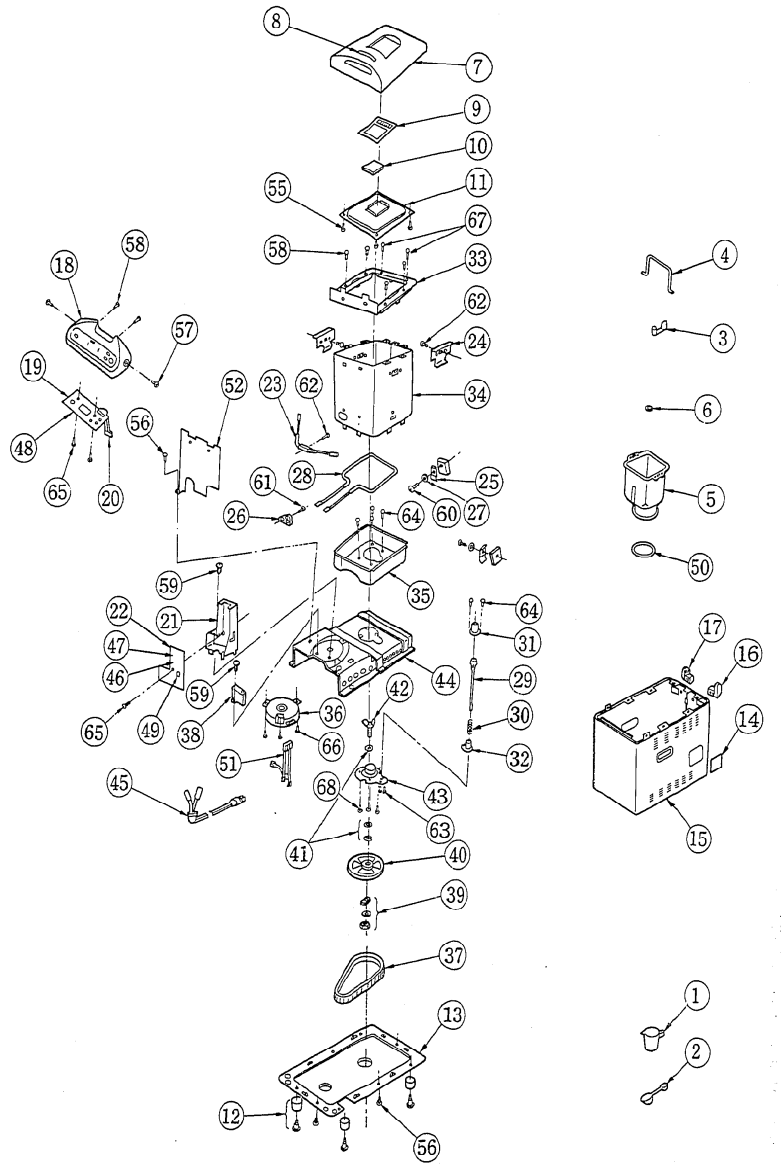
No.	Description	Parts No.	Q'ty	Remarks	FOB
1	Measuring Cup	HB-B102 901	1		
2	Measuring Spoon	HB-B102 902	1		
3	Mixing Blade	HB-B301 901	1		
4	Handle	HB-B2 503	1		
5	Brea Pan Ass'y	HB-C103 901	1		
6	Packing Ass'y	HB-B100 927	1		
7	Lid(WH)	HB-C103 902	1		
8	Caution Label	HB-C103 903	1		
9	Window Frame	HB-C103 904	1		
10	Viewing Window	HB-C103 905	1		
11	Inner Lid	HB-C103 906	1		
12	Rubber Foot Ass'y	HB-A100 905	1	With foot screw	
13	Bottom Plate	HB-C103 907	1		
14	Name Plate Label	HB-C103 908	1		
15	Outer Case Ass'y(WH)	HB-C103 909	1	With Appliance Handle	
16	Hinge(R)(WH)	HB-C103 910	1		
17	Hinge(L)(WH)	HB-C103 911	1		
18	Panel Ass'y(WH)	HB-C103 912	1	With panel sheet	
19	Contorol Board Ass'y	HB-C103 913	1	With lead wire ass'y	
20	Lead wire Ass'y				
21	Power Supply Board Case				
22	Power Supply Board Ass'y	HB-C103 914	1		
23	Thermal Fuse Ass'y	HB-C103 915	1	192°C-10A with fuse holder	
24	Hold Spring	HB-C103 916	1		
25	Heater Holder				
26	Insulator(A)	HB-B102 915	1		
27	Insulator(2) Ass'y	HB-B2 526	1		
28	Heater Ass'y	HB-C103 917	1	120V-600W	
29	Thermo Case Ass'y	HB-C103 918	1	Thermistor and case ass'y	
30	Thermo Spring				
31	Thermo Cover				
32	Thermo stopper				
33	Inner Case Upper				
34	Inner Case Body				
35	Inner Case Bottom				
36	Mixing Motor Ass'y	HB-C103 919	1	With thermal protector 120V, With motor pulley	
37	Belt	HB-C103 920	1		
38	Condenser	HB-C103 921	1	8μF-220V AC (With tab terminals)	
39	Hold Plate Ass'y	HB-B2 535	1		
40	Pulley	HB-C103 922	1		
41	Washer Ass'y	HB-A1 026	1		

No.	Description	Parts No.	Q'ty	Remarks	FOB
42	Shaft Ass'y	HB-A1 022	1	With coupling(lower)	
43	Shaft Holder	HB-C103 923	1	(Bearing ass'y) With bearing	
44	Chassis				
45	Power Cord Ass'y	HB-C103 924	1	Polarized edison plug	
46	Over Current Fuse	HB-B102 921	1		
47	Serge Killar(Barista)	RZ-1860MT 113	1		
48	IC1	HB-C103 925	1	µPD75328GC-708-389	
49	Relay	HB-B102 923	1	G5CE-I-TP	
50	Rubber Paking	HB-B2 540	1		
51	Motor Lead Wire Ass'y				
52	Reflector				
53					
54					
55	4x12 +Truss Head Tap Screw 2 SUS			Parts in market used	
56	4x8 +Pan Head Tap Screw 1			Parts in market used	
57	4x10 +Truss Head Tap Screw 1 Ni			Parts in market used	
58	4x8 +Pan Head Tap Screw 1 SUS			Parts in market used	
59	M4x8 +Truss Head Screw			Parts in market used	
60	4x20 +Truss Head Tap Screw 1 SUS			Parts in market used	
61	4x12 +Truss Head Tap Screw 1 SUS			Parts in market used	
62	M4x8 +Pan Head Screw SUS			Parts in market used	
63	4x8 +Pan Head Tap Screw 2			Parts in market used	
64	4x8 +Pan Head Tap Screw 2 SUS			Parts in market used	
65	3x8 +Pan Head Tap Screw 1			Parts in market used	
66	M4x8 +Pan Head Screw with Spring Washer			Parts in market used	
67	4x20 +Pan Head Tap Screw 2 SUS			Parts in market used	
68	M4x6 +Pan Head Screw with Spring Washer			Parts in market used	

10. ACTUAL WIRING DIAGRAM



11. STRUCTURAL DEVELOPMENT DIAGRAM



HITACHI

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